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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,987	08/17/2001	Jeffery Davis	10010715-1	4217

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EXAMINER

NGUYEN, CHANH DUY

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 02/10/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,987

Applicant(s)

DAVIS ET AL

Examiner

Chanh Nguyen

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The response filed on November 17, 2003 has been entered and considered by examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-5, 8-13, 15-19 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al (U.S. Patent No. 4,751,505) in view of Piot et al (U.S. Patent No. 6,256,016).

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As to claim 1, Williams discloses an apparatus (mouse 100) for controlling the position of a screen pointer (cursor) for an electronic device having a display screen (see column 1, lines 4-8) including a light source (106) for illuminating an imaging surface, thereby generating reflecting image. Williams teaches a single chip (iC124) for receiving the reflected images, generating digital representations of the reflected images, generating a first set of movement data based on the digital representations of the reflected images, the first set of movement data indicative of relative motion between the chip and the image surface (i.e., IC circuit 124 included in mouse 100 which is moved on the surface 22); see column 3, line 2 through column 4, line 11. The only thing Williams does not show is a serial interface included in the single chip. In the same field of endeavor, Pito teaches that the microcontroller (650) is also coupled to the line interface 660 ... the output from the line interface 660 is a standard communication, such as a serial port communication protocol; see column 13, lines 41-54. Pito also teaches that microcontroller (650) can be integrated by different modules such 620, 625 (see column 13, lines 45-54). Thus it would have been obvious that the microcontroller (650) can be integrated with the serial interface protocol (660) so as to reduce the size of the input device. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have added a serial interface as taught by Pito to the integrated circuit of Williams so that the size of the input device can be reduced.

As to claim 10, this claim differs from claim 1 in that claim 1 is apparatus whereas claim 10 is method. Thus, method claim 10 is met by William in view of Pito.

As to claim 16, this claim differs from claim 1 in that the limitation an analog to digital converter is additionally recited. This limitation is taught by Piot; see Figure 7B(1) and column 15, lines 47-55.

As to claims 2 and 17, both Williams and Piot teach optical mouse.

As to claims 3 and 18, Piot clearly teaches a Universal Serial Bus interface (see column 13, lines 41-54).

As to claims 4-5 and 19, Williams clearly teaches the button (116, 114) connected to the integrated circuit (124). Thus, combining Williams and Piot would meet the claimed limitation.

As to claims 8-9 and 22, since the microcontroller of Piot can be programmable. Thus, the microcontroller of Piot can provide test information as recited in claim 8 and configure to receive orientation information indicating a mounting orientation of the chip as recited in claim 9.

As to dependent method claims 11-13 and 15, these method claims are analyzed as previously discussed with respect to dependent apparatus claims 2-4 and 8-9.

As to claim 21, it is well-known in the art the controller being either micro processor or microprocessor.

5. Claims 6-7, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Piot as applied to claims 1, 10 and 16 above, and further in view of Siddiqui (U.S. Patent No. 5,912,661).

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As to claims 6-7, 14 and 20, note the discussion of William and Piot above, both do not teaches Z wheel information indicative of movement of a Z wheel on the apparatus.

Siddiqui teaches z wheel button (22) for controlling cursor movement along a third axis (see column 2,lines 3-13 and column 4,lines 41-59). Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have added the z wheel button as taught by Siddiqui to the input device of William as modified by Piot so that the image in third dimension can be controlled by the pointing device with relatively simple construction (see column 1 , line 64 through column 2,line 2 of Siddiqui).

Response to Arguments

6. Applicant's arguments filed November 17, 2003 have been fully considered but they are not persuasive.

On page 7, first paragraph, applicant argues that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both William and Piot teach an optical mouse. Although Williams's processing techniques may differs from Piot's device, but both Williams and Piot provide an optical detection system that detects movement of an optical pointing device relative to a surface.

On page 7, second paragraph, applicant argues that Williams includes no teaching or suggestion that the optical mouse disclosed therein could or should be modified to include a serial interface anywhere within the mouse. However, applicant simply argues the reference of Williams, but the rejection is over Williams in view of Piot. Thus, while Williams does not mention a serial interface, but Piot clearly teaches a serial interface included in the mouse. Applicant also argues that Piot includes not teaching or suggestion that the line interface 660 could or should be cooperated into the same integrated circuit as microcontroller. However, Piot also teaches that microcontroller (650) can be integrated by different modules such 620, 625 (see column 13, lines 45-54). Piot also teaches that microcontroller (650) can be integrated by different modules such 620, 625 (see column 13, lines 45-54). Thus it would have been obvious that the microcontroller (650) can be integrated with the serial interface protocol (660) so as to reduce the size of the input device.

Moreover, the use of a one piece construction instead of the structure disclosed in Williams and Piot would be merely a matter of obvious engineering choice. In re Larson, 144 USPQ 347 (CCPA 1965); In re Fridolph, 50 CCPA 745, 89 F.2d 509, 135 USPQ 319. The unification or integration involve more than mere depending more upon the choice of the manufacturer, and the convenience and availability of the machine and tools necessary to construct the device. In re Lockhart, 90 USPQ 214 (CCPA 1951); In re Murray, 19 C.C.P.A. (Patents) 739, 53 F.2d 541, 11 USPQ 155; In re Zabel et al., C.C.P.A. (Patents) 832, 186 F. 2d 735, 88 USPQ 367.

As to claim 10, applicant argues that the combination of Williams and Piot also does not teach or suggest the limitations of claim 10, including the limitation outputting movement data in a serial format from the electronic chip based on the generated motion data". Examiner disagrees with applicant this point of view because Piot uses a serial port communication protocol line interface 660 for outputting movement data (see column 13, lines 42-55).

As to claim 16, applicant presents the same arguments as presented in claim 10. Thus it is analyzed the same as claim 10 above.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (703) 308-6603.

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Steven Saras can be reached at 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



C. Nguyen
January 28, 2004



CHANH NGUYEN
PRIMARY EXAMINER